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EMOTIONAL INTELLIGENCE AND EMOTION REGULATION STRATEGIES¹

Do emotional abilities relate to specific strategies of emotion regulation? Do people with higher emotional intelligence (EI) use more efficient affect regulation strategies? In the current study we tried to answer these questions. Using a sample of 349 undergraduate students, the present study explored the relationships between emotional intelligence (assessed with performance measure) and the habitual use of suppression and reappraisal. Results showed that higher emotional intelligence was related to more frequent use of reappraisal, and less frequent employment of suppression. As in the previous studies, males and females significantly differed in suppression: men suppressed more than women. However, our results revealed that this difference could be attributed only to men with low EI. Emotionally unintelligent men used suppression more frequently not only in comparison to women, but also to men with higher EI. With respect to the habitual use of reappraisal, only men disclosed a significant relation to EI level: those male participants who revealed the highest EI level declared employment of reappraisal more frequently than other groups.

Keywords: emotional intelligence, emotion regulation strategies, reappraisal, suppression, gender differences

INTRODUCTION

Emotions arise when something important to an individual takes place. Usually, they serve numerous adaptive functions: guide thinking and motivate action (e.g., Frijda, 1988; Isen, 1987), convey information about people's thoughts and intentions (Ekman, 2003; Oatley & Jenkins, 1996), facilitate interpersonal communication, and help individuals to understand and manage their social environment (Forgas, 2006). Properly used, emotions may provide responses to many adaptive problems and constitute our well-being (Lewis, Haviland-Jones, & Barrett, 2008).

People differ in their capacity to perceive, understand, and regulate emotions in themselves and in others. This individual difference was described over 20 years ago as emotional intelligence (Mayer & Salovey, 1993; Mayer & Salovey, 1997; Salovey & Mayer, 1990). Salovey and Mayer (1990; modified by Mayer & Salovey, 1997) who developed the first coherent theory of EI, understand emotional intelligence as a cooperative combination of intelligence and emotion, defined as: "the capacity to reason about emotions, and of emotions to enhance thinking. It (EI) includes the abilities to accurately perceive emotions, to access and generate emotions so

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as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth” (Mayer & Salovey, 1997, p.10). Their model conceptualizes emotional intelligence as composed of four hierarchically arranged inter-related abilities (branches): perceiving, facilitation, understanding, and managing emotions (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004). Branch 1, *Perception of Emotion*, includes identifying and discriminating emotions in one’s own and others’ physical states, as well as in other stimuli like music, stories, or works of art. Important abilities involved in this branch also contain appropriate expression of one’s emotions, and effective detection of false emotional expression. Branch 2, *Using Emotion to Facilitate Thought*, refers to generating and harnessing feelings in a way that becomes useful in certain cognitive processes, such as problem solving, decisions making, memory functioning, and creative thinking. This ability enables an individual to regard emotions as important cues of priorities for their cognitive system. Branch 3, *Understanding Emotion*, involves accurate labeling of emotions and recognizing the differences and similarities between them. High ability to understand emotions means that one is able to analyze how emotions can be combined, how they progress and alter from one to another, and what the consequences of emotional experiences are. Branch 4, called *Managing Emotion*, refers to the capacity to regulate one’s own and others’ emotional states. This ability includes effectively managing emotions by reducing, enhancing, or modifying emotional responses in the way that is most appropriate to the given situation (Mayer, Salovey, & Caruso, 2000a; Mayer, Salovey, & Caruso, 2000b; Mayer, Salovey, & Caruso, 2004; Mayer, Salovey, & Caruso, 2008). The processes involved in emotion management have been intensely explored and discussed for the last decade in literature on emotion regulation (Gross, 2007; Gross & Thompson, 2007).

Researchers understand and define emotion regulation in various ways. For example, Campos and colleagues (Campos, Frankel, & Camras, 2004) propose a unitary model of emotion and emotional regulation. They point out that emotion manifestation and emotional regulation are indistinguishable interacting processes that do not appear in a sequential manner. They claim that emotion regulation can be activated before emotion is generated, and therefore influence its intensity. In some cases, regulatory behaviors such as avoiding or seeking situations that are more likely to elicit particular emotions can prevent or generate specific emotional reactions. Furthermore, processes like appraisal of a situation and self-assessment of capacity are responsible for both activating and regulating emotions. In their opinion, the distinction between emotion and emotional regulation can only be conceptual as both processes appear in parallel and have the same function in the person-environment interaction. However, the vast majority of researchers claim that emotion and emotion regulation are two separate phenomena and focus on exploring specific regulation strategies. For instance, Garnefski and colleagues (Garnefski, Kraaij, & Spinhoven, 2001) distinguish nine conceptually different cognitive emotion regulation strategies: Self-blame, Other-blame, Rumination, Catastrophizing, Putting into Perspective, Positive Refocusing, Positive Reappraisal, Acceptance, and Planning. The results of her studies suggest that by using cognitive styles such as Rumination, Catastrophizing, and Self-blame people may be more vulnerable to emotional problems, while other styles, such as Positive Reappraisal, make them less vulnerable.

The most seminal perspective and the most dominating conception in present-day literature is a modal model of emotion proposed by Gross (eg. 1997; 2007). Gross states that emotion regulation results in changes to the dynamics, duration, and speed of emotion occurrence. Such understanding of the concept was earlier

proposed by Thompson (1991) who argued that emotion regulation involves changes in emotion dynamics such as latency, rise time, magnitude, and duration, as well as the offset of responses in the behavioral, experiential, or physiological domains. Similarly to Salovey's and Mayer's description of Branch 4, Gross declares that emotion regulation refers to reducing, strengthening, or maintaining the experience of both positive and negative emotions depending on the current goals of an individual. In his process model of emotion (Gross, 1997; Gross, 2002; Gross & John, 2003; Gross, 2008; John & Gross, 2004), emotion regulation is described as occurring on five different levels related to the dynamics of emotional process. The first level of emotion-generative process is selection of the situation. It refers to approaching or avoiding certain people, places, or things to regulate emotion. Level two is situation modification. Once selected, a situation may be tailored so as to modify its emotional impact. If someone is in a situation that may elicit unwanted emotions, he/she may try to influence the situation so that it is less unpleasant. Deployment of attention is the third level of emotion regulation strategies. It is used to select which of the many aspects of a situation a person focuses on. For example, someone can concentrate on the more positive aspects of a situation or even distract herself/himself from a current situation by focusing on positive memories or plans. The next level, cognitive change, refers to changing the interpretation of a situation. Changing the way of thinking about the emotion eliciting situation or the possibility to cope with it may change the emotional meaning of the situation. Cognitive change might be used to decrease the emotional response, but also to magnify the emotional response and even to change the emotion itself (Goldin, McRae, Ramel, & Gross, 2008; Gross, 2002). Finally, response modulation refers to attempts to change the way emotion is expressed once it has already been elicited. The first four strategies Gross classified as „anteced-

ent-focused”, because they are employed before the emotion response tendencies have become fully activated (2002; Ochsner & Gross, 2005). The last strategy is called „response-focused”, as it is used after the emotion response tendencies have been generated.

Rather than scrupulously analyzing all emotion regulation strategies, Gross and his colleagues concentrated on two of them. Employing the criteria of frequent use in everyday life, precise definition in terms of individual differences, and possibility of manipulation in the laboratory, they focused on cognitive reappraisal and expressive suppression. The former is an exemplar of antecedent-focused strategy, whereas the latter represents response-focused strategy. Reappraisal occurs early in the emotion-generative process and may modify the whole emotional process and response. It is a form of cognitive change that involves revising the way of thinking about a situation by altering its emotional meaning and impact. Suppression is a form of response modulation that involves inhibiting ongoing emotion-expressive behavior (Gross, 1998). It comes later in the emotion-generative process and does not influence the emotion itself, affecting only the behavioral aspects of emotion response tendencies. Suppression requires active effort to manage the emotion.

Individuals differ in their use of these two emotion regulation strategies, and such individual differences have implications for their affect, well-being, and social relationships (e.g. Gross, 2008; Gross & John, 2003). Gross and colleagues show that people who habitually use reappraisal as an emotion regulation strategy experience and express more positive and less negative emotions, while people who use mainly suppression experience and express less positive and more negative emotions. Using reappraisal turned out to be related to a higher level of well-being and better interpersonal functioning, whereas using suppression had the opposite effect. According to the researchers, long-term suppression as the

only method of managing emotions may have negative consequences for psychological and physical health, leading to psychosomatic diseases and interpersonal problems (John & Gross, 2004). Therefore, suppression is described as an „unhealthy“ strategy compared to reappraisal, which seems to serve as an adaptive strategy.

Does this mean that people high in emotional intelligence use reappraisal more often than those with low levels of EI? Do low EI individuals employ suppression more frequently? Gross and John (2003), applying a scale used by some researchers as a self-report measure of EI (Trait Meta-Mood questionnaire; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), found that reappraisal was related to greater use of mood repair while suppression correlated negatively with attention to emotion, clarity of emotions, and repair efforts. These results suggest that people low on emotional intelligence use suppression more often than people high on emotional intelligence.

The most evident connection with effective emotion regulation should be displayed by the fourth branch of EI - managing emotion. Nevertheless, it seems that successful emotion regulation also requires other skills. Undoubtedly, accurate perception of own and other people's emotions (Branch 1) substantially facilitates the process of emotion regulation: it is much easier to control aptly recognized feelings than undistinguished affects. Therefore, a person good at fast and effortless inferring of emotional cues might be more effective in regulating emotions. Branch 2, which involves using emotion-related information to facilitate thoughts and make better decisions, may play a similarly useful role in emotion regulation. Knowledge about most appropriate behaviors for a specific situation, and the ability to use emotional information to focus attention on important aspects of the environment might significantly advance emotion regulation. Also, Branch 3 (*Understanding Emotion*) seems closely related to the process of emotion regula-

tion. The capacity to understand what emotions are and how they work enables controlling them. Some authors even claim that “skills for understanding emotion are at the heart of intelligent regulation, influencing the other branches and acting as the driving force” (Wranik, Feldman Barrett, & Salovey, 2007, p. 395). According to Wranik et al. (2007), emotion regulation is simultaneously a component of EI and a complex set of abilities anchored within the entire emotion process. Surprisingly, as far as we know, these claims have not been empirically tested. The results obtained by Gross and John (2003) seem coherent with theoretical assumptions; however, they are based on two self-report measures which are not independent from self-esteem processes. As it has been spectacularly proved by Brackett and colleagues (Brackett, Rivers, Shifmann, Lerner, & Salovey, 2006), self-report and performance measures of EI are weakly correlated. It is probable that in everyday life people receive little explicit feedback about their emotional abilities, and therefore their self-knowledge in that domain is scarce. Self-report measures of EI are also dimly related to the person's actual social behavior when compared to performance test measures (e.g., Brackett et al., 2006). Thus, the first aim of the present study was to investigate the relationship between strategies that people adopt to regulate emotions and emotional intelligence measured with an ability test.

The second purpose of this paper was to explore gender differences in the overlapping domains of emotional intelligence and emotion regulation. It has been proven that women perceive and understand emotions better than men, and tend to be more emotionally expressive (e.g., Argyle, 1990; Tapia & Marsh II, 2006; Trobst, Collins, & Embree, 1994). Women tend to show greater knowledge about emotional experiences, provide more complex and differentiated descriptions about emotions, and use a broader emotional vocabulary (Adams, Kuebli, Boyle, & Fivush, 1995; Feldman Barrett, Lane, Sechrest, &

Schwartz, 2000). These results have been reproduced using performance indicators of emotional intelligence. Studies employing ability tests of EI, like MEIS or MSCEIT, reveal systematic significant predominance of women in comparison to men (e.g., Brackett & Mayer, 2003; Brackett, Mayer, & Warner, 2004; Kafetsios, 2004).

Accumulating evidence shows that males and females also differ significantly in the habitual use of emotion regulation strategies. Men use suppression more often than women (Gross & John, 2003; Flynn, Hollenstein & Mackey, 2010) while experiencing the same level of emotion (Kring & Gordon, 1998). This pattern of gender differences is usually explained in terms of social norms. Emotions operate within social norms, and the norms governing appropriate behavior for men and women are different. Research shows that boys are taught greater emotional control than girls, and are expected to inhibit their emotional expressions to a greater extent than their female peers (Underwood, Coie, & Herbsman, 1992). As a result, in the domain of emotional expression, women display more emotion than men (Brody, 1997). Due to the notion that manifesting emotions is viewed as generally 'unmanly' (Brody, 2000), it is asserted that men habitually apply suppression as a way of dealing with strong affect.

But are these gender effects independent from the emotional intelligence of a man or a woman? We attempt to answer that question in the present research by empirical examination of the relationships between emotional intelligence, emotion regulation strategies, and gender. Following Gross, our study refers to two emotion regulation strategies (suppression and reappraisal) which are precisely defined and well tested exemplars of antecedent-focused and response-focused strategies.

METHOD

PARTICIPANTS

Three hundred forty-nine undergraduate students (227 women and 122 men) participated

in exchange for course credit. The average age was 19.6 years (*SD* .93).

MATERIALS AND PROCEDURE

Emotional intelligence. EI was measured using TIE - the Emotional Intelligence Test (Śmieja, Orzechowski, & Beauvale, 2007). This 24-items ability test was constructed on the basis of Mayer and Salovey's (1997) four-factor model. With reference to this model, the tool consists of four subscales: Perception, Understanding, Facilitation, and Management of Emotions. Respondents read short stories featuring people in emotional situations and ranked alternative answers in order of their accuracy. Similarly to the MSCEIT (Mayer, Salovey, & Caruso, 2002), expert criteria are employed to determine the correctness of answers. Though the theoretical background and structure of TIE are based on Salovey and Mayer's research, all items are original and well embedded in a Polish cultural context. In the present study, TIE achieved reasonable reliability (Cronbach's alpha for the global scale is .88, for the subscales: Perception .69, Understanding .68, Facilitation .65, Emotion Management .63).

Emotion Regulation Strategies. We measured individual differences in habitual reappraisal and suppression using a Polish version of the Emotion Regulation Questionnaire (ERQ, Gross & John, 2003). The questionnaire consists of 10 items rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Six items measure reappraisal (e.g. "*I control my emotions by changing the way I think about the situation I'm in*") and four items load suppression factor (e.g. "*I control my emotions by not expressing them*"). The questionnaire was translated into Polish with agreement of the authors by Dorota Kobylińska (using a back translation procedure). Norms for Polish population do not exist so far, however in four previous studies (unpublished Master thesis) reliabilities for both scales were between .75 and .85 (in American samples the reliabilities

were between .75 and .82 for Reappraisal, .68 and .76 for Suppression – Gross & John, 2003). Reliabilities in the present study were .77 for Reappraisal and .74 for Suppression.

Procedure

The study was run in one session. Participants completed the TIE and ERQ in small groups along with other measures not considered in this study.

RESULTS

Descriptive statistics of both measures are reported in Table 1.

Table 1. Descriptive statistics

Measure	N	Min	Max	Mean	SD
TIE	349	13.32	38.43	29.17	4.129
Perception	349	1.65	10.88	8.04	1.487
Understanding	349	3.14	10.37	7.57	1.340
Facilitation	349	3.30	10.04	7.07	1.316
Management	349	2.29	9.02	6.48	1.261
Reappraisal	349	1.67	7.00	4.89	.993
Suppression	349	1.00	6.75	3.40	1.291

ERQ scores were comparable to other samples in the literature (e.g., Gross, 2002; Gross & John, 2003, John & Gross, 2004). As in the previous research (e.g., Gross, 2007; Gross & John, 2003; McRae, Ochsner, Mauss, Gabrieli, & Gross, 2008), men used suppression more often than women and this difference was highly significant, $t(343) = 5.62, p < .0001$.

Overall means were 3.93 (SD 1.32) for men and 3.14 (SD 1.19) for women. For Reappraisal, there were no consistent gender differences (M 4.89 [SD 1.04] for men and M 4.90 [SD 0.96] for women). Reappraisal and Suppression scales were not related significantly.

TIE scores were very similar to those found in previous research (Śmieja, Orzechowski, & Asanowicz, in press). Women scored higher than men on each subscale: Perception: $t(343) = 6.41, p < .0001$, Facilitation $t(343) = 3.78, p < .0001$,

Understanding $t(343) = 5.19, p < .0001$, Management $t(343) = 5.43, p < .0001$, and total score of TIE, $t(343) = 7.05, p < .0001$. These results are close to previous findings concerning ability tests of EI (e.g., Brackett et al., 2006).

Total scores on the emotional intelligence test were positively correlated with Reappraisal ($r = .136, p < .005$), and negatively with Suppression ($r = -.158, p < .002$). Two subscales of TIE showed systematic relationships with regulation strategies. Facilitation was significantly correlated with Reappraisal (positive correlation $r = .153, p < .002$) and Suppression (negative correlation: $r = -.188, p < .0001$). Similarly, Managing emotions was positively related to Reappraisal ($r = .133, p < .007$) and negatively to Suppression ($r = -.114, p < .017$). Additionally, Perception of Emotion was negatively correlated with Suppression ($r = -.127, p < .009$).

Table 2. Correlations between emotion regulation strategies and emotional intelligence (general result and subscales)

	TIE	Percep- tion	Under- stand- ing	Facili- tation	Ma- nage- ment
Reappraisal Correlation	0.136	0.086	0.049	0.153	0.133
p	0.005	0.055	0.182	0.002	0.007
Suppression Correlation	-0.158	-0.127	-0.053	-0.188	-0.114
p	0.002	0.009	0.160	<0.001	0.017

To explore the interaction between EI and gender, we assigned participants to the bottom, second, third, or top quartile on the basis of their TIE test performance and conducted a 2 (gender) x 4 (quartile) UNIANOVA. In the case of Suppression

on, the Quartile x Gender interaction was significant ($F(3,336) = 2.77, p < .04, \eta^2 = .024$). There were no significant differences in employment of the suppression strategy between the groups of women with different EI levels. In the case of male scores, however, the analyses showed that the least intelligent men apply suppression significantly more often than men in the third ($F(1,336) = 5.07, p < 0.02$) and fourth quartile ($F(1,336) = 4.21, p < 0.04$) (see Figure 1).

Moreover, men in the first and second quartiles of EI used suppression more frequently than women with similar levels of EI, $F(1,336) = 19.89, p < 0.001$ and $F(1,336) = 12.18, p < 0.001$, respectively.

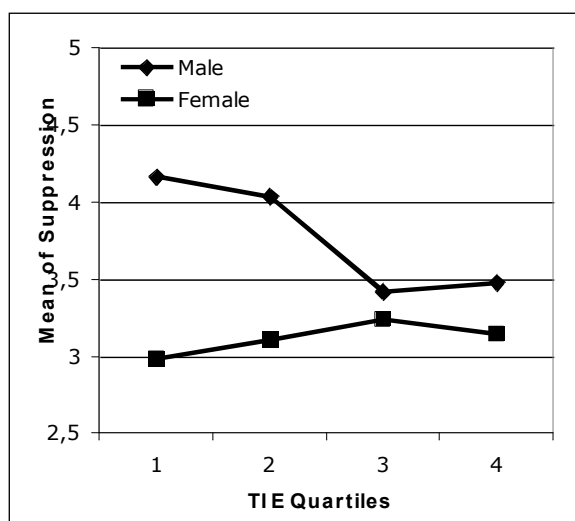


Figure 1. Means of Suppression for males and females in four TIE quartiles. Men from two bottom quartiles (lower EI) use suppression significantly more often than males from upper quartiles (higher EI) and all female quartiles.

In the case of Reappraisal, the Quartile x Gender interaction was not significant ($F(3,336) = 1.73, p = .16, \eta^2 = .015$). Follow-up analyses showed that emotional intelligence in women was not related to the form of the cognitive change they used: women with various levels of EI employed reappraisal to a similar extent. Men's scores on

reappraisal in the three bottom quartiles of EI did not differ from women's; however, the top male quartile of EI revealed a significant difference in using reappraisal as compared to women. The most intelligent men applied cognitive change notably more often than other groups ($F(1,336) = 5.59, p < .019$; see Figure 2).

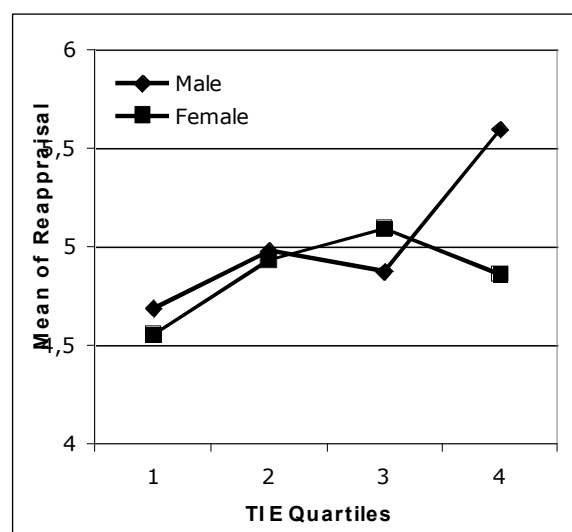


Figure 2. Means of Reappraisal for males and females in four TIE quartiles. Men from the top quartile (high EI) use reappraisal significantly more often than males from three lower quartiles (low and medium EI) and all female quartiles.

DISCUSSION

The first aim of our research was to explore the relationships between emotional intelligence measured by a performance test and the habitual use of emotion regulation strategies. We wondered whether people with different levels of EI apply different strategies of emotion regulation. Our findings show that there is indeed a significant relationship between emotional abilities and preferred strategies of emotion regulation. In general, higher emotional intelligence is related to more frequent use of reappraisal, and less frequent employment of suppression. This result supports theoretical assumptions, showing that

people endowed with higher emotional abilities choose more efficient strategies of emotion regulation. However, it was the interaction with gender that revealed the gist of that relationship. Along with the previous findings (e.g., Gross & John, 2003), the present study proved that men use suppression more often than women. Nevertheless, our results show that this picture is more complex. Analysis of the interaction between gender and emotional intelligence revealed that the effect of gender on emotion regulation strategies is produced exclusively by men low on EI. Only emotionally unintelligent men suppress emotional expression more than women. As we have found, they use suppression more frequently not only in comparison to women, but also to men with higher EI. Why is that? One of the possible explanations is that they are in some way ‘doomed’ to suppression. On one hand, men low on EI are unable to use more sophisticated strategies because these strategies are based on accurate perception, understanding, and facilitation of emotions –abilities they do not possess. On the other hand, expressing feelings, which may be an available remedy for emotionally unintelligent women, seems socially unacceptable in men. As a result, men low on EI habitually suppress emotion.

In coherence with previous studies (Gross & John, 2003; Gross, Richards, & John, 2006), men and women reported using the reappraisal strategy with comparable frequency. But similarly to suppression, in respect to reappraisal men (but not women) disclosed a significant relation to EI level. Emotional intelligence of females was not related to the use of reappraisal: women with various levels of EI employed this strategy to a similar extent. However, the most emotionally intelligent men applied cognitive change notably more often than other groups (women and less intelligent men).

It seems clear why higher levels of EI correlate with the frequency of using cognitive change. Reappraisal is an antecedent-focused

strategy referring to things that can be done before the emotion response tendencies become fully activated. It is based on the capability to accurately perceive one’s own feelings and predict their dynamics and consequences. Constructing a potentially emotion-eliciting situation in a way that changes its emotional impact could be very difficult without requisite levels of emotional intelligence. Moreover, this strategy is described as a more effective and „healthier“ emotion regulation strategy than suppression (John & Gross, 2004; Srivastava, Tamir, McGonigal, John & Gross, 2009), and since people with high EI are seen as effective in dealing with their emotions, the two characteristics should be related. Why, in that case, do intelligent men use reappraisal more often than intelligent women? Probably because women typically use a wider range of strategies than men do. Evidence for that claim has been already found in numerous studies (Thoits, 1991, 1994; Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2004; Nolen-Hoeksema & Aldao, 2011) and meta-analyses (Tamres, Janicki, & Helgeson, 2002). It is probable that an emotionally intelligent woman (just because she is a woman) uses several different strategies of emotion regulation and therefore reveals no significant relation between her emotional intelligence and reappraisal. Men, in contrast, are more inclined to use cognitive emotion regulation strategies. For example, Ongen (2010) found that male adolescents reported Positive refocusing, Refocus on planning, and Positive reappraisal more often than female adolescents while McRae et al. (2008) proved that men are able to use cognitive regulation with less effort than women. In result, although all men prefer the “cognitive” way in dealing with emotions, only those high on EI are able to apply it. Although these findings need to be replicated, they are in line with previous studies suggesting that emotional intelligence in men is more closely related to their social adaptation and quality of social interaction than it is in women (Brackett et al., 2004).

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